

REMARKS

The present application was filed on February 25, 2004 with claims 1-23. Claims 22 and 23 have been withdrawn. Claims 1, 6 and 18-20 have been amended and claims 1 and 18 are the pending independent claims.

In the outstanding Office Action dated November 9, 2005 the Examiner: (I) rejected claims 1 and 18 under 35 U.S.C. §112, second paragraph; (ii) rejected claims 1 and 16-21 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Publication No. US 2004/0124545 (hereinafter “Wang”); (iii) rejected claims 2-11 and 14 under 35 U.S.C. §103(a) as being unpatentable over Wang in view of U.S. Patent No. 5,205,463 (hereinafter “Holdgrafer”); and (iv) rejected claims 12, 13 and 15 under 35 U.S.C. §103(a) as being unpatentable over Wang in view of U.S. Patent No. 6,072,211 (hereinafter “Miller”).

With regard to the rejection of claims 1 and 18 under 35 U.S.C. §112, second paragraph, Applicants maintain that such claims particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. The Examiner contends that the claims do not provide any orientation of the two bonding sites with respect to the package, however the claims do not recite a package. Therefore, such an orientation to a package is not relevant to an examination of the claims. Further, the Examiner contends that the claims do not provide the viewing angle with respect to the die and bonding sites. Applicants assert that this viewing angle is clear in that the claims recite that two wire bond profiles are substantially perpendicular to one another at a crossing point of the profiles. As described on page 1, paragraph 4, of the Specification, a wire bond profile may be characterized as a side or profile view of a wire extending from a first bond site to a second bond site.

Notwithstanding the above traversal, Applicants have amended claims 1 and 18 to recite the creation of bonded wires having profiles, wherein the profiles of at least two bonded wires in the integrated circuit are substantially perpendicular to one another at a crossing point thereof. Support for the amendments can be found in FIGS. 3 and 4, and on page 1, paragraph 4, and page 7, paragraph 2 of the Specification. Accordingly, withdrawal of the §112, second paragraph rejection of claims 1 and 18 is respectfully requested.

With regard to the rejection of claims 1 and 16-21 under 35 U.S.C. §102(e) as being anticipated by Wang, Applicants respectfully assert that Wang fails to teach or suggest all of the limitations in claims 1 and 16-21 for at least the reasons presented below.

It is well-established law that a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Appellants assert that the rejection based on Wang does not meet this basic legal requirement. Support for this assertion follows.

The present invention, for example, as recited in independent claim 1, recites a method for performing a wire-bonding operation in an integrated circuit, utilizing a bonding tool. A wire is ball bonded to a first bond site in the integrated circuit. At least one bend is formed in the wire. The wire is terminated at the second bond site, thereby creating a bonded wire having a profile. The ball bonding, forming and terminating steps are repeated for at least one additional wire in the integrated circuit. The profiles of at least two bonded wires in the integrated circuit are substantially perpendicular to one another at a crossing point thereof. Independent claim 18 recites an additional embodiment of the invention having similar limitations.

Wang discloses a high density integrated circuit. The Examiner refers to FIGS. 6-8 and specific portions of Wang describing an integrated circuit in order to provide support for the rejection of the limitations of independent claim 1. However, both the specification and the figures of Wang fail to disclose profiles of two bonded wires that are substantially perpendicular to one another at a crossing point thereof. FIGS. 6-8 of Wang fail to illustrate profiles of bonded wires, therefore it is not possible for FIGS. 6-8 to illustrate a substantially perpendicular crossing point of profiles of the bonded wires. Further, while FIG. 10 of Wang does illustrate profiles of bonded wires in an integrated circuit, the crossing points of such profiles are not substantially perpendicular. Therefore, Wang fails to teach or suggest all the limitations of independent claims 1 and 18.

Applicants assert that dependent claims 16, 17 and 19-21 are patentable at least by virtue of their dependency from independent claims 1 and 18. Dependent claims 16, 17 and 19-21 also recite

patentable subject matter in their own right. Accordingly, withdrawal of the §102(e) rejection of claims 1 and 16-21 is respectfully requested.

With regard to the rejection of claims 2-11 and 14 under 35 U.S.C. §103(a) as being unpatentable over Wang in view of Holdgrafer, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness, in that the collective teachings of Wang and Holdgrafer do not meet the claim limitations.

Applicants assert that claims 2-11 and 14 are patentable at least by virtue of their dependency from independent claim 1. Holdgrafer fails to provide the disclosure necessary to remedy the deficiencies of Wang described above with regard to independent claim 1. Dependent claims 2-11 and 14 also recite patentable subject matter in their own right. For example, while the portions of Holdgrafer referred to by the Examiner disclose the application of a reverse motion in the formation of a wire bond, Holdgrafer fails to disclose the application of a negative reverse motion and a positive reverse motion in the step of forming at least one bend in the wire as recited dependent claim 3. Accordingly, withdrawal of the §103(a) rejection of claims 2-11 and 14 is respectfully requested.

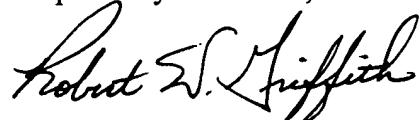
With regard to the rejection of claims 12, 13 and 15 under 35 U.S.C. §103(a) as being unpatentable over Wang in view of Miller, Applicants submit that the Examiner has failed to establish a *prima facie* case of obviousness, in that the collective teachings of Wang and Miller do not meet the claim limitations.

Applicants assert that claims 12, 13 and 15 are patentable at least by virtue of their dependency from independent claim 1. Miller fails to provide the disclosure necessary to remedy the deficiencies of Wang described above with regard to independent claim 1. Dependent claims 12, 13 and 15 also recite patentable subject matter in their own right. Accordingly, withdrawal of the §103(a) rejection of claims 12, 13 and 15 is respectfully requested.

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In view of the above, Applicants believe that claims 1-21 are in condition for allowance, and respectfully request withdrawal of the §112, §102(e) and §103(a) rejections.

Respectfully submitted,



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